comprising a plurality of rolling elements held between inner and outer races with a cage interposed therebetween, wherein an oil film of lubricating oil of which a dynamic viscosity at 40°C is greater than 100 and not exceeding 150 mm^2/s and effective to improve fretting resisting properties, and which contains an extreme pressure agent and a corrosion preventing agent, is formed on raceway surfaces of the inner and outer races, said cage and said rolling elements, and wherein a grease is enclosed.

REMARKS

Applicants respectfully request favorable reconsideration of this application, as amended.

Without acceding to the outstanding rejections, Claim 1 has been amended to focus further upon the improvement of Applicants' invention in relation to fretting resisting properties in a low-torque spindle drive. More particularly, as amended, Claim 1 recites a fretting resisting spindle support roller bearing of a low-torque spindle drive, comprising a plurality of rolling elements held between inner and outer races with a cage interposed therebetween, wherein an oil film of lubricating oil of

which a dynamic viscosity at 40°C is greater than 100 and not exceeding 150 mm^2/s and effective to improve fretting resisting properties, and which contains an extreme pressure agent and a corrosion preventing agent, is formed on raceway surfaces of the inner and outer races, the cage and the rolling elements, and wherein a grease is enclosed.

Claim 1 stands rejected under 35 U.S.C. § 112, first paragraph, as lacking support for the claimed dynamic viscosity range of "greater than 100 and not exceeding 150 mm^2/s." Claim 1 additionally stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Shiraishi et al. (Shiraishi). Both rejections are respectfully traversed.

Regarding the rejection under § 112, first paragraph, Applicants' specification clearly supports the claimed range. See, for example, page 3, lines 21-22 and page 5, lines 7-8. The fact that Applicants are claiming a particularly preferred range within the broader range supported by the disclosure does not render the claims deficient under § 112, first paragraph. Accordingly, the rejection under § 112, first paragraph, is unfounded and should be withdrawn.

As to Shiraishi, contrary to the Office's assertion in the outstanding Office Action, Shiraishi does not actually

teach any specific composition having both an oiliness improver (which the Office equates with Applicants' claimed extreme pressure agent) and a dynamic viscosity greater than 100 mm^2/s at 40°C. Note that the only specific examples containing an oiliness improver in Shiraishi all use base oils having a viscosity in the range of 17-20 mm^2/s (see examples 11-16, and note also comparative examples 3-4). This is nowhere close to the viscosity range set forth in Applicants' Claim 1 and, if anything, would lead one away from the use of Shiraishi's oiliness improver in compositions with oil viscositics in Applicants' claimed range. Moreover, as previously noted in the prosecution, Applicants' invention provides a highly effective solution to the problem of fretting corrosion in grease-filled spindle support bearings, a problem that Shiraishi does not even address. Couple these facts with the fact that Shiraishi explicitly eschews the use of oils having a dynamic viscosity greater than 100 mm^2/s at 40°C, and it becomes apparent that Applicants' claimed invention would not have been obvious to one of ordinary skill in the art given the actual teachings of Shiraishi.

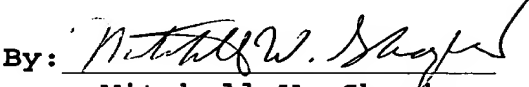
Accordingly, Claim 1 distinguishes patentably from Shiraishi and should now be allowed.

The dependent claims should be allowed at least in view of the allowability of Claim 1 as discussed above.

Applicants respectfully request that this case be passed to issue.

The Commissioner is hereby authorized to charge to Deposit Account No. 50-1165 any fees under 37 C.F.R. §§ 1.16 and 1.17 that may be required by this paper and to credit any overpayment to that Account. If any extension of time is required in connection with the filing of this paper and has not been requested separately, such extension is hereby requested.

Respectfully submitted,

By: 
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January 16, 2003

MARKED-UP COPY OF CLAIM:

1. (Four times amended) A fretting resisting spindle support roller bearing of a low-torque spindle drive, comprising a plurality of rolling elements held between inner and outer races with a cage interposed therebetween, wherein an oil film of lubricating oil of which a dynamic viscosity at 40°C is greater than 100 and not exceeding 150 mm^2/s and effective to improve fretting resisting properties, and which contains an extreme pressure agent and a corrosion preventing agent, is formed on raceway surfaces of the inner and outer races, said cage and said rolling elements, and wherein a grease is enclosed.